

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A computer program product, tangibly embodied in a computer-readable storage medium, the computer program product comprising instructions operable to cause a data processing apparatus to perform operations comprising:

detecting, by a client, multiple changes to a user interface of a server computer program, the user interface executing on the client and having multiple user interface elements, each change being a change to one of the multiple user interface elements;

generating a rendering request for each change, each rendering request specifying the user interface element that has changed and a type of modification to be performed on the user interface element; and

filtering, by the client, the rendering requests to eliminate redundant rendering requests, the redundant rendering requests being identical to or a subset of another rendering request.

2. (Original) The product of claim 1, wherein each rendering request is a request to modify a data structure representing the user interface.

3. (Original) The product of claim 2, wherein the data structure is a document object model representation of the user interface.

4. (Original) The product of claim 1, wherein:

the type of modification is a complete re-rendering of the user interface element.

5. (Previously Presented) The product of claim 1, wherein:

a first one of the user interface elements comprises multiple attributes; and

a first one of the rendering requests specifies an update of one or more, but not all, of the attributes of the first user interface element.

6. (Original) The product of claim 1, wherein the operations further comprise:

rendering the user interface based on the filtered rendering requests.

7. (Currently Amended) A client An apparatus comprising:

means for detecting multiple changes to a user interface of a server computer program, the user interface executing on the client apparatus and having multiple user interface elements, each change being a change to one of the multiple user interface elements;

means for generating a rendering request for each change, each rendering request specifying the user interface element that has changed and a type of modification to be performed on the user interface element; and

means for filtering, by the client apparatus, the rendering requests to eliminate redundant rendering requests, the redundant rendering requests being identical to or a subset of another rendering request.

8. (Currently Amended) The client apparatus of claim 7, wherein each rendering request is a request to modify a data structure representing the user interface.

9. (Currently Amended) The client apparatus of claim 8, wherein the data structure is a document object model representation of the user interface.

10. (Currently Amended) The client apparatus of claim 7, wherein:
the type of modification is a complete re-rendering of the user interface element.

11. (Currently Amended) The client apparatus of claim 7, wherein:
a first one of the user interface elements comprises multiple attributes; and
a first one of the rendering requests specifies an update of one or more, but not all, of the attributes of the first user interface element.

12. (Currently Amended) The client apparatus of claim 7, further comprising:
means for rendering the user interface based on the filtered rendering requests.

13. (Currently Amended) A client system comprising:

a processor;

a Web page rendered by the processor in a Web browser, the Web page
corresponding to a server application and including one or more user interface
elements;

a document object model representation of the Web page, and

a framework running in the browser, the framework including:

one or more trees that store the visualization of the Web page, each user
interface element being associated with a portion of the document object model
representation and with a portion of the tree; and

a filtering mechanism for filtering, by the client system, redundant rendering
requests, the redundant rendering requests each being identical to or a subset of
another rendering request,

wherein each rendering request specifies a user interface element that has
changed and a type of modification to be performed on the portion of the document
object model representation associated with the specified user interface element.

14. (Currently Amended) The client system of claim 13, wherein the trees
include a UI tree, a data tree, or both.

15. (Previously Presented) The computer program product according to claim 1,
wherein:

a first rendering request and a second rendering request each specify a first user interface element;

the first rendering request specifies a complete re-rendering of the first user interface element;

the second rendering request specifies re-rendering a subset of attributes of the first user interface element; and

the second rendering request is filtered as a redundant rendering request.

16. (Previously Presented) The computer program product according to claim 1, wherein:

the user element is a text field, radio button, table, tray, or menu.

17. (Previously Presented) The computer program product according to claim 5, wherein the attribute specified by the first rendering request is a color attribute of the first user interface element.

18. (New) The computer program product according to claim 1, wherein each of the user interface elements filters its own rendering requests.

19. (New) A method comprising:

downloading a client-side framework to a client from a server, the framework including a user interface tree, the user interface tree including a child node representing a user interface element;

detecting multiple changes to the user interface element and generating rendering requests corresponding to the changes; and

filtering, by the user interface element, the rendering requests to eliminate redundant rendering requests that are identical to or a subset of another one of the rendering requests.